

IN THE CLAIMS:

Rewrite the pending claims and add new claims as follows:

1-2. (Canceled)

3. (Previously Presented) A computer readable memory to direct a computer to function in a specified manner, comprising:

a first set of instructions to automatically determine a type of a speaker of the computer;

a second set of instructions to select a set of filter coefficients for a digital filter based upon the type of the speaker; and

a third set of instructions to realize a parametric equalizer using the digital filter, the digital filter producing an output signal to be input to the speaker from the set of filter coefficients and an input signal; wherein the parametric equalizer comprises a plurality of equalizer bands, each equalizer band having one or more filters;

wherein the second set of instructions further include:

a fourth set of instructions to receive user specified equalizer parameters for the parametric equalizer;

a fifth set of instructions to calculate the set of filter coefficients from the user specified equalizer parameters; and

a sixth set of instructions for insuring that a value of a cut/boost parameter of the user specified equalizer parameters meets predefined mathematical criteria.

4. (Canceled)

5. (Currently Amended) ~~The computer readable memory of claim 4 further comprising:~~

A computer readable memory to direct a computer to function in a specified manner, comprising:

a first set of instructions to automatically determine a type of a speaker of the computer;

a second set of instructions to select a set of filter coefficients for a digital filter based upon the type of the speaker; and

a third set of instructions to realize a parametric equalizer using the digital filter, the digital filter producing an output signal to be input to the speaker from the set of filter coefficients and an input signal; wherein the parametric equalizer comprises a plurality of equalizer bands, each equalizer band having one or more filters;

wherein the second set of instructions further include:

a fourth set of instructions to receive user specified equalizer parameters for the parametric equalizer;

a fifth set of instructions to calculate the set of filter coefficients from the user specified equalizer parameters;

wherein the third set of instructions comprise:

a sixth set of instructions to realize a first equalizer band of the parametric equalizer, the first equalizer band having a first cut/boost parameter;

a seventh set of instructions to realize a second equalizer band of the parametric equalizer, the second equalizer band having a second cut/boost parameter;

an eighth set of instructions to realize a third equalizer band of the parametric equalizer, the third equalizer band having a third cut/boost parameter; and

wherein the computer readable memory further comprises a ninth set of instructions for insuring a first combined cut/boost of the first, second and third equalizer bands meets predefined mathematical criteria.

6. (Previously presented) The computer readable memory of claim 5 wherein the ninth set of instructions comprise:

a tenth set of instructions to determine whether a second combined cut/boost of the first equalizer band and the second equalizer band meets predefined mathematical criteria;

an eleventh set of instructions to determine whether a third combined cut/boost of the second equalizer band and the third equalizer band meets predefined mathematical criteria; and

a twelfth set of instructions to determine whether a fourth combined cut/boost of the first equalizer band and the third equalizer band meets predefined mathematical criteria.

7. (Previously presented) The computer readable memory of claim 6 wherein:
the tenth set of instructions uses a relationship for adjacent bands to determine whether the second combined cut/boost meets predefined mathematical criteria;
the eleventh set of instructions uses the relationship for adjacent bands to determine whether the third combined cut/boost meets predefined mathematical criteria; and
the twelfth set of instructions uses a relationship for non-adjacent bands to determine whether the fourth combined cut/boost meets predefined mathematical criteria.
8. (Canceled)
9. (Currently Amended) A method for improving audio quality of a computer including a Universal Serial Bus (USB) loud speaker, the method comprising the steps of:
a) determining automatically a type of the USB loud speaker of the computer;
b) ~~selecting~~ designating a first set of filter coefficients ~~as a selected set of filter coefficients~~ if the USB loud speaker is of a first type;
c) ~~selecting~~ designating a second set of filter coefficients ~~as the selected set of filter coefficients~~ if the USB loud speaker is of a second type;
d) calculating a third set of filter coefficients from equalizer parameters of a parametric equalizer if user specified equalizer parameters are received;
e) ~~selecting~~ designating the third set of filter coefficients ~~as the selected coefficients~~ if user specified equalizer parameters are received;
f) realizing a parametric equalizer using a digital filter, the digital filter generating an output signal to be input to the USB loud speaker from an input signal and the selected set of coefficients; wherein the parametric equalizer comprises a plurality of equalizer bands, each such equalizer band having one or more filters; and
g) insuring that a value of a cut/boost parameter of the parametric equalizer meets predefined mathematical criteria.
10. (Canceled)
11. (Currently Amended) ~~The method of claim 10 wherein step g comprises the substeps of:~~ A method for improving audio quality of a computer including a Universal Serial Bus (USB) loud speaker, the method comprising the steps of:
a) determining automatically a type of the USB loud speaker of the computer;

b) selecting a first set of filter coefficients if the USB loud speaker is of a first type;

c) selecting a second set of filter coefficients if the USB loud speaker is of a second type;

d) calculating a third set of filter coefficients from equalizer parameters of a parametric equalizer if user specified equalizer parameters are received;

e) selecting the third set of filter coefficients if user specified equalizer parameters are received;

f) realizing a parametric equalizer using a digital filter, the digital filter generating an output signal to be input to the USB loud speaker from an input signal and the selected set of coefficients; wherein the parametric equalizer comprises a plurality of equalizer bands, each such equalizer band having one or more filters; and

wherein the parametric equalizer includes a first equalizer band, a second equalizer band and a third equalizer band;

the method including:

g1) determining whether a first combined cut/boost of the first equalizer band and the second equalizer band meets predefined mathematical criteria;

g2) determining whether a second combined cut/boost of the second equalizer band and the third equalizer band meets predefined mathematical criteria;
and

g3) determining whether a third combined cut/boost of the first equalizer band and the third equalizer band meets predefined mathematical criteria.

12. (Previously presented) The method of claim 11 wherein steps g1 and g2 use a relationship for adjacent bands and step g3 uses a relationship for non-adjacent bands.

13-15. (Canceled)

16. (Currently Amended) ~~The computer program product of claim 15 further comprising~~
A computer program product for use in conjunction with a computer system, the computer program product comprising a computer readable storage medium and a computer program mechanism embedded therein, the computer program mechanism comprising one or more modules to improve audio quality of the computer system, the one or more modules including:

a first set of instructions to automatically determine a type of a Universal Serial Bus (USB) speaker of the computer system;

a second set of instructions to select a set of filter coefficients for a digital filter based upon the type of the USB speaker; and

a third set of instructions to realize a parametric equalizer using a the digital filter, the digital filter producing an output signal to be input to the USB speaker from the set of filter coefficients and an input signal; wherein the parametric equalizer comprises a plurality of equalizer bands, each such equalizer band having one or more filters;

wherein the second set of instructions further include:

a fourth set of instructions to receive equalizer parameters; and

a fifth set of instructions to calculate the set of filter coefficients from the equalizer parameters if received without regard to the type of the speaker; and

wherein the third set of instructions comprise:

a sixth set of instructions to realize a first equalizer band of the parametric equalizer, the first equalizer band having a first cut/boost parameter;

a seventh set of instructions to realize a second equalizer band of the parametric equalizer, the second equalizer band having a second cut/boost parameter;
and

an eighth set of instructions to realize a third equalizer band of the parametric equalizer, the third equalizer band having a third cut/boost parameter;

the one or more modules further including:

a ninth set of instructions for insuring a first combined cut/boost of the first, second and third equalizer bands meets predefined mathematical criteria.

17. (Previously presented) The computer program product of claim 16 wherein the ninth set of instructions comprise:

a tenth set of instructions to determine whether a second combined cut/boost of the first equalizer band and the second equalizer band meets predefined mathematical criteria;

an eleventh set of instructions to determine whether a third combined cut/boost of the second equalizer band and the third equalizer band meets predefined mathematical criteria; and

a twelfth set of instructions to determine whether a fourth combined cut/boost of the first equalizer band and the third equalizer band meets predefined mathematical criteria.

18. (Previously presented) The computer program product of claim 17 wherein:
the tenth set of instructions uses a relationship for adjacent bands to determine whether the second combined cut/boost meets predefined mathematical criteria;
the eleventh set of instructions uses the relationship for adjacent bands to determine whether the third combined cut/boost meets predefined mathematical criteria; and
the twelfth set of instructions uses a relationship for non-adjacent bands to determine whether the fourth combined cut/boost meets predefined mathematical criteria.

19-20. (Canceled)